The neutral salt solution electrolysis part 6 is explained in detail, in Fig. 2 as representative of the parts 6, 8, 10 that are structurally identical with respect to the detail shown in the disclosure.

The neutral salt solution electrolysis part 6 comprises an electrolyte tank 21 storing the neutral salt solution 20, a pump 22 that pressurizes the neutral salt solution 20, anodes 23 and cathodes 24 that also serve as a nozzle, and power 25 connected to the anodes 23 and the cathodes 24. The anodes 23 are arranged in the upstream region relative to the movement direction of the steel strip 1, and the cathodes 24 are arranged in the downstream region, on both sides of the steel strip 1. In the respective regions, the electrodes of both sides are the same polarity.

The anodes 23 and the cathodes 24 have jet openings 26 that jet neutral salt solution 20 to the steel strip 1. That is, the anodes 23 and the cathodes 24 are integrating with the nozzles that jet the neutral salt solution 20. The neutral salt solution 20 in the electrolyte tank 21 is pressurized by the pump 22 and is jetted on both sides of steel strip 1 from the jet openings 26 of the anodes 23 and the cathodes 24. Thereby both sides of steel strip 1 are covered by a film of the neutral salt solution 20. The excessive neutral salt solution 20 returns to the electrolyte tank 21.

In the example 1 , by descaling the steel strip 1

without immersing in the neutral salt solution 20, the quantity of the neutral salt solution 20 is small.

Therefore, as the size of the electrolyte tank is reduced, it is possible to miniaturize the descaling apparatus.

Fig. 2 shows the anode 23 of Fig. 1 in detail.

The anode 23 has a pressure adjustment valve 27 that adjusts a jet pressure, a liquid receiver 28 storing the neutral salt solution 20 supplied from the pump 22 through the pressure adjustment valve 27, and an electrical conductor 29 connected with the power supply 25. The liquid receiver 28 and the conductor 29 are separated by an electric insulating material 30 so that the anode 23 is insulated from the electrolyte tank 21. The jet opening 26 is long in the direction of according to the width of the steel strip 1, as shown in Fig. 3B.

The neutral salt solution 20 drawn from the electrolyte tank 21 by the pump 22 is stored under adjusted pressure for a while in the liquid receiver 28 and is jetted from the jet opening 26 to the steel strip 1. With the pressure adjustment valve 27, we can adjust the jet pressure of the neutral salt solution 20 to the steel strip 1 individually for each electrode.

In this example, we adjust the pressure of the electrolyte independently to the both sides of the steel strip 1 properly in order to prevent the flexure of the steel

strip 1. Because the steel strip 1 does not have flexure, we can arrange the anodes 23 and the cathodes 24 close to the steel strip 1. Since the distance between the electrodes (the anodes 23 and the cathodes 24) and the steel strip 1 thereby became short, the voltage drop in the distance became small, and the voltage applied to the electrodes became lowered. Therefore, the total electric power for the electrolysis is reduced.

We have brought the anodes 23 and the cathodes 24 as close as 1 cm to the steel strip 1 in practice. The distance is 1/10 or less as compared with the conventional electrolysis submerging steel strip. As a result, the electrolytic efficiency improves 65 - 95 % or more compared with the prior art. Therefore, we reduce the voltage from 20V to 7 V or less to obtain the sane electric current density of 20A/cm^2 as the prior art.

Next, a flow of the electric current in the neutral salt solution electrolysis part 6 is explained with respect to Fig. 2.

The power supply 25 applies a voltage between the anodes 23 and the cathodes 24. On the one hand the surface of steel strip 1 between the cathodes 24 becomes negatively charged, on the other hand the surface between the anodes 23 becomes positively charged. The electric current of power supply 25 flows to the negative charged part of the steel strip 1 through the jet stream 31(Fig. 3A) from the anode 23 and the neutral salt solution film 32 that covers the surface